2011

ENT1 Curriculum Modification for 2011-12

Fanshawe College

May 5th, 2011

To: Lane Trotter

Re: Late Change Request to Degree Audit

Programs: SLT1 Science Laboratory Technology
ENT1 Environmental Technology

Catalog: 2011/2012

Rationale: Changes made as the result of recommendations from the program reviews

Recommendation: Approve

Deb Wilkin

FINAL PROGRAM REVIEW COMMITTEE MEETING - EVENT SIX

SCIENCE LABORATORY TECHNICIAN

12noon – April 13, 2011

T3010-12 – Fanshawe College

PRESENT:

Darlene Pratt, John Makaran (-12:50), Cathy Gall, Marilyn Willis, Tara Green (recording secretary)

Regrets: Chris Fliesser

REVIEW OF PREVIOUS PROGRAM REVIEW RECOMMENDATIONS

The committee reviewed the PDF of previous recommendations (please refer to Appendix A for the 2006 Program Review Recommendations)

- The first 11 recommendations suggested program outcomes that were addressed in the program review mapping process where courses were matched to published provincial standards. The mapping process also included the creation and addition of a new program standard to the current provincial outcomes.

Previous Recommendation	Comment
#12 – Re-visit the sequence of academic and co-op semesters in the program, especially the 3rd academic semester offered during the summer.	Addressed in current review as well (proposing a 7 week blocked semester format for May/June)
#13 – Add an independent research based project in the final semester of the program.	Complete
#14 – Add "Forensic Lab" in the program brochure as a potential career opportunity for graduates.	Complete (new course 'Molecular Biology'was added)
#15 – Ensure that graduates have the ability to develop a plan for continued professional growth.	Ongoing (currently pursuing articulations with Guelph and Windsor)
#16 – Replace the program learning outcomes as described in the current program description with the program learning outcomes recommended.	Subject content suggested in the outcome recommendations described here are addressed in the current published provincial outcomes. Suggesting provincial outcome changes would be difficult.
#17 – Continue to offer the Science Laboratory Technology Program.	Agree
#18 – Review the program again within 5 years.	Agree

REVIEW OF INTERNAL ASSESSMENT SUMMARY OF RECOMMENDATIONS

Recommendations	Action
1. Allocation of time and/or resources to ensure current program content remains current (e.g. seminars, legislation changes)	• Use program team meetings to disseminate information and identify areas needing growthChair will formalize agreement for professional development during 10 days allocated per year (non-teaching time) • Updates for college resources such as software to be researched and approved
2. Building infrastructure should be sufficient to support high tech equipment	• Coordinator to contact Lab Operations Manager to make a plan to address the issue and set deadlin where possible for completion of each step needed to resolve problem • Coordinator and Lab Operations Manager to communicate with Chair any plans for changes which will help to facilitate process • The plan would include the number of pieces of equipment and what is needed to run and maintain the equipment • Present budget requests to chair in **September 2012** as the mid-year budget review is in October
3. Develop a plan for consistent feedback from the cooperative education consultant.	• Chair to contact co-op consultant and the Manager of Career Services • The plan should include such details as the consultant attending one program team meeting per semester, and reporting on employer feedback, student work in the field, types of positions, equipment utilized in the various positions and the regulatory guidelines
4. Explore admission criteria with respect to increasing the minimum grade, or requiring a specific Grade 12 Math as the pre-requisite.	• After investigation by the program coordinator, --this may not be the most affective route • Coordinator to continue to pursue addition of remedial course to program and work with math coordinator on math curriculum and add a Fundamentals of Science course in first semester. • Continue to promote jumpstart program offered by the learning centre

REVIEW OF EXTERNAL FOCUS GROUP SUMMARY OF RECOMMENDATIONS

Recommendations	Action
1. **Review curriculum to identify and ensure that the following areas are addressed** (how are they taught and evaluated in courses): a) Understanding basic microbial skills - including the regulatory side of microbiology. b) Ability to problem-solve and demonstrate initiative. c) Recognize requirements and assumptions of statistical calculations, design of experiments and analysis of results. **d)** Software applications for data management, design of experiments, statistics, etc.	a) See new recommendation below regarding new faculty hire. • Incorporate laboratory quality assurance and control concepts based on industry guidelines into a statistics course (MATH3030) being revised in 2012 so that statistical calculations and control charts would be applied to laboratory work and not taught only in terms of mathematics. b) –Faculty will continue to stress the importance of problem-solving & taking initiative in existing courses & student evaluation. c) focus on experimental design has been incorporated into the CHEM5003 Food Chemistry course this semester. • Recommend that consideration be given to incorporating experimental design into the MATH3030 statistics course. d) - recommend that Microsoft Access database program be included in curriculum – possible courses would be the existing MATH3062 course, the new Fundamentals of Science (SKLS1020), statistics (MATH-3030). • Investigate the possibility of using a Microsoft Access-based LIMS system in the D3011
2. Explore the potential of developing and including new curriculum related to legislation and regulations within the industry.	Include quality assurance and control concepts, as well as general awareness of regulatory standards, into MATH3030 Statistics or Industrial Chemistry. Many, if not all of these concepts are taught in several courses, but perhaps students would better understand their relevance if the material was also emphasized in a coherent unit. Consideration given to approach of delivery model for these topics.

Recommendations	Action
3. **Examine the content and method of delivery addressed in the program for the application of safety knowledge and procedures**. This could include such methods as: a) Using case studies where students have to investigate and find the cause of accidents. b) Simulation computer applications. c) Speakers into class from the field with real life stories related to safety– especially during the co-op class.	• Make requests for speakers from industry to come and speak to the co-op class during 2nd semester to emphasized safety • Ask faculty if anyone would be willing to Investigate current software offerings and case studies relating to safety
4. **Investigate the potential for alternative co-op terms, both the length and the timing. For example: altering the co-op set up to two 8 months terms.**	• At this point the current co-op model is very difficult to change.
5. **Develop a marketing plan that focuses on attracting university students to the program.**	• Coordinator and Chair to initiate a meeting with marketing to develop a plan to attract university students

ADDITIONAL RECOMMENDATIONS

1. **Ensure Fanshawe college Faculty are involved in the next review of Provincial Standards**	• pursue with the MTCU ?
2. **Explore possibility of adding a new full-time biology faculty**	• Coordinator to continue to reinforce the need for a full time faculty member to teach biology with the chair • Coordinator to ascertain deadline for decision package application • Chair to review and bring forward to budget discussions

- **Commendations & Affirmations**
  - Co-operative education provides solid field experience
  - This Science Laboratory Program is highly respected in the field
  - Fanshawe's program has a unique focus and offering -
    - Petro chemical, food and beverage and pharmaceutical

PROGRAM/CURRICULUM "RATIONALE FOR CHANGES"

All requests for changes to programs of instruction must be submitted to the Registrar's Office by December 1st each year for changes to be implemented for the following September intake. All changes require the approval of the Dean and possibly the VPA's Office, if significant.

REMINDER: We need to ensure that changes are made properly and in a timely manner to: maximize student success; optimize employment preparation; meet all quality and integrity responsibilities to MTCU, PQAPA and our Board of Governors; and meet community expectations.

➥ The ***Program/Curriculum "Rationale for Changes"*** should be completed using this template and all areas must be completed. An electronic copy of this document should be submitted to the Registrar's Office.
➥ The Dean/Chair responsible for the program should consult with other affected schools and obtain the appropriate sign-offs on a paper copy of this document. Once all consultations and sign-offs have occurred, the paper copy should be submitted to the RO
➥ Course Request Forms must also be submitted electronically to Strategy and Planning for all new courses. These will be forwarded to Scheduling following approval of the changes by the Dean and possibly the VPA's Office.

1.0 Program Requiring Changes

Program Title:	Science Laboratory Technology	
Program Alpha & Number:	SLT1	
Effective Catalog Year:	2011/12	

Please answer each of the questions below, if applicable. Missing or incomplete information may delay approval and/or implementation of the proposed changes.

2.0 Rationale for Changes

2.01 Provide a brief description of the reasons for the proposed changes.

Please see attached documents

2.02 Students

- Are changes a response to student feedback? Or our Programs Data Report - Weak Factors? (summarize how changes address this issue)
- How will changes affect student learning and success? (describe evidence to support this)
- How will changes affect cost of the program for students? (e.g., materials fees; equipment fees - laptop program; OSAP implications)
- How will changes affect the flow of the program?

2.03 Relationship of Program to Industry
- How do changes reflect trends in the field or in industry? (Provide data regarding industry and/or professional trends.)

2.04 Program Learning Outcomes
- How do the changes align with Ministry outcomes? (Provide a copy of the completed program map indicating gaps/overlaps that are being corrected)

2.05 Relationships with Other Fanshawe College Programs
- Is this course in a laddered program or part of any other Fanshawe College program?

2.06 Relations with Other Post-Secondary Programs
- How will the changes affect transfer agreements with other post-secondary institutions?
- What discussions have been initiated with these institutions regarding the changes?

2.07 Changes on Fit of Program with general College Requirements for Programs
- How do changes affect the fit of the program with the College's strategic plan, program mix, general education requirements, marketing?
- Are changes consistent with Colleges policies/practices? (Identify specific areas where policies/practices need to be altered if program changes approved.)

3.0 Consultation Regarding Proposed Changes

3.01 Consultation With Program Advisory Committee
- Indicate feedback from the program advisory committee regarding the changes.

3.02 Consultation With Other Programs/Schools/Services
- What programs/schools/services have been consulted?
- What feedback and suggestions have been offered through consultation?

4.0 Resource Implications of Proposed Changes

4.01 Staffing
- Outline all staffing consequences, both for the program and related areas.

4.02 Services
- Outline all consequences on other areas.

4.03 Space or Technology Requirements
- Outline how changes affect space and/or technology requirements.

4.04 Budgetary Implications
- Outline budgetary implications (include consequences on other schools such as increase/decrease in teaching hours required)
- Outline changes to materials fees.

Approvals: Chair of School and Dean of Faculty; possibly VPA's Office, if significant

❒ Approved ❒ Not Approved / Requires Changes

Chair of School/Campus (signature) Date 07.04.2011.

Dean of Faculty (signature) Date April 7, 2011

Chair of Servicing School, if required (signature) Date

Vice-President, Academic, if required (signature) Date

Fundamentals of Science: SKLS-1020

Student success in the Environmental Technology and Science Laboratory Technology program is determined by several factors one of which is the level of preparedness coming from high school. Basic skills in Math and Science (Chemistry and Physics) are poor in some cases. In an attempt to increase our student retention in first year a course in first semester offering an introduction to several concepts in these areas of study is purposed. The topics covered in this course would give the students a stronger foundation in their core subject areas.

The recent program reviews of both programs identified some areas that our employers would like to see strengthened. Under the heading of Employer Expectations in the Environmental Technology Summary of Recommendations MS Word, Excel, x/y graphs, and metric to standard conversions were all items mentioned by our employers. By introducing these and other concepts in first semester it would allow more applications to be covered in advanced courses (for example computer application in MATH-3062). Computer skills applications were also identified at the Science Laboratory Program review.

The course format will enable students to be presented with these foundations, practice and apply the concepts in a tutorial setting (including computer lab) without adding to their outside of classroom workload (also a success factor) appreciably. Students with a strong background in this area of study will have an opportunity to write an exemption test allowing for more focus on the students that may be at risk.

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Effective Catalog Year:	2011/12	

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PROGRAM MAPPING (Science Laboratory Technology SLT1)													
Data from Program Mapping Session on March 16, 2011		LEVEL ONE						LEVEL TWO					
PROGRAM ESSENTIAL EMPLOYABILITY SKILLS OUTCOMES **4 = R 5 = RE 6 = TE 7 = TRE** **T = Taught R = Reinforced E = Evaluated** **The graduate has reliably demonstrated the ability to: (Source: MTCU Code)**	XXXX-XXXX Fundamental Science Skills	BIOL-1016 Cytology	CHEM-1003 General Chemistry 1	WRIT-1039 Reason & Writing - Technology	MATH-1172 Math1	ENVR-1014 Environmental & Science Issues		INDV-XXXX General Education Elective	BIOL-3001 Microbiology 1 - Bacteriology	CHEM-1012 General Chemistry 2	MATH-3062 Mathematics 2	PHYS-1001 Physics	**# OF COURSES SUPPORTING THE OUTCOME**
1. communicate clearly, concisely and correctly in the written, spoken, and visual form that fulfills the purpose and meets the needs of the audience.		6	6		7	6			7	7	7	5	8
2. respond to written, spoken, or visual messages in a manner that ensures effective communication.	4	6	6		7	6			7	7	7	4	9
3. execute mathematical operations accurately.	7		6		7					7	7	7	6
4. apply a systematic approach to solve problems.	5		6		7	6			7	7	7	5	8
5. use a variety of thinking skills to anticipate and solve problems.	4		6		7	7			7	7	7	4	8
6. locate, select, organize, and document information using appropriate technology and information systems.			6		7	6			7	7	7	5	7
7. analyze, evaluate, and apply relevant information from a variety of sources.			6		6	6			7	7	6	7	7
8. show respect for the diverse opinions, values, belief systems, and contributions of others.	4	4	4		4	4			4	4	4	4	9
9. interact with others in groups or teams in ways that contribute to effective working relationships and the achievement of goals.	4	5	5		4	5			5	5	4	4	9
10. manage the use of time and other resources to complete projects.	4	6	6		4	5			5	5	4	4	9
11. take responsibility for one's own actions, decisions, and consequences.	4	6	6		4	4			5	5	4	4	9
TOTAL # OF OUTCOMES SUPPORTED BY EACH COURSE		6	11	0	11	10		0	10	11	11	11	

PROGRAM COORDINATOR: Cathy Gall

ACADEMIC CHAIR: John Makaran

Date Completed:

Professor: